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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,726	03/24/2004	Owen H. Decker	FA0915USDIV	3691
23906	7590	11/30/2006		
E I DU PONT DE NEMOURS AND COMPANY LEGAL PATENT RECORDS CENTER BARLEY MILL PLAZA 25/1128 4417 LANCASTER PIKE WILMINGTON, DE 19805				
			EXAMINER JAGOE, DONNA A	
			ART UNIT 1614	PAPER NUMBER
DATE MAILED: 11/30/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/807,726	<b>Applicant(s)</b> DECKER ET AL.	
	<b>Examiner</b> Donna Jagoe	<b>Art Unit</b> 1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 23 and 25-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 23 and 25-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION*****Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 26, 2006 has been entered.

***Claims 23 and 25-52 are pending in this application.***

***Drawings***

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: reference characters 1 through 12 in Figure 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d), **or** amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and

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informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

In addition to Replacement Sheets containing the corrected drawing figure(s), applicant is required to submit a marked-up copy of each Replacement Sheet including annotations indicating the changes made to the previous version. The marked-up copy must be clearly labeled as "Annotated Sheets" and must be presented in the amendment or remarks section that explains the change(s) to the drawings. See 37 CFR 1.121(d)(1). Failure to timely submit the proposed drawing and marked-up copy will result in the abandonment of the application.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 23 and 25-30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the specific antimicrobial metals, metal ions and silver salts recited in the instant specification, it does not reasonably provide enablement for generic metal, generic metal ion or generic silver. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

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Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdAplS 1986) at 547 the court recited eight factors:

- 1) the quantity of experimentation necessary,
- 2) the amount of direction or guidance provided,
- 3) the presence or absence of working examples,
- 4) the nature of the invention,
- 5) the state of the prior art,
- 6) the relative skill of those in the art,
- 7) the predictability of the art, and
- 8) the breadth of the claims.

The instant specification fails to provide guidance that would allow the skilled artisan to practice the instant invention without resorting to undue experimentation, as discussed in the subsections set forth hereinbelow.

1. **The nature of the invention, state of the prior art, relative skill of those in the art, and the predictability of the art**

The claimed invention relates to an antimicrobial agent that is impact fused to a resin based powder.

The relative skill of those in the art is generally that of a Ph.D.

Metal Finishing represents a standard publication in the art and as such is directed to those having ordinary skill in the art.

2. **The breadth of the claims**

The claims are very broad and inclusive of any and all metals, metal ions, and silver.

3. **The amount of direction or guidance provided and the presence or absence of working examples**

The specification provides a limited number of metals; metal ions and silver salts/ions specified that demonstrate the prerequisite antimicrobial properties. However, if a metal, such as arsenic or lead were employed, (which is within the scope of the claims) the results would be potentially harmful.

4. **The quantity of experimentation necessary**

Applicant fails to provide guidance and information sufficient to allow the skilled artisan to ascertain which specific metals, metal ions and silver, known or to be discovered, can be used to provide the antimicrobial effects without resorting to undue experimentation. The skilled artisan would expect the interactions of a particular metal and resin-based powder to be very specific and highly unpredictable absent a clear understanding of the structural and biochemical basis for each that would result in the "impact fusion" and the instant specification sets forth no such understanding nor any criteria for extrapolating beyond those actually demonstrated. Absent a reasonable *a priori* expectation of success for using the specific metals, metal ions and silver to effect the impact fusion with a resin based powder, one skilled in the art would have to extensively test many various combinations of metal, metal ions and silver with the resin-based powder to discover success in each case. Since each prospective

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embodiment, and indeed future embodiments as the art progresses, would have to be empirically tested, and those which initially failed tested further, an undue amount of experimentation would be required to practice the invention as its is claimed in its current scope, because the specification provides inadequate guidance to do otherwise.

Claims 35-52 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the specific metals and metal ions in the instant specification, it does not reasonably provide enablement for generic antimicrobial metals or generic metal ions. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention commensurate in scope with these claims.

Attention is directed to *In re Wands*, 8 USPQ2d 1400 (CAFC 1988) at 1404 where the court set forth the eight factors to consider when assessing if a disclosure would have required undue experimentation. Citing *Ex parte Forman*, 230 USPQ 546 (BdApl 1986) at 547 the court recited eight factors:

- 1) the quantity of experimentation necessary,
- 2) the amount of direction or guidance provided,
- 3) the presence or absence of working examples,
- 4) the nature of the invention,
- 5) the state of the prior art,
- 6) the relative skill of those in the art,
- 7) the predictability of the art, and

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8) the breadth of the claims.

The instant specification fails to provide guidance that would allow the skilled artisan to practice the instant invention without resorting to undue experimentation, as discussed in the subsections set forth hereinbelow.

1. **The nature of the invention, state of the prior art, relative skill of those in the art, and the predictability of the art**

The claimed invention relates to an antimicrobial agent (metal/metal ion) that is impact fused to a resin based powder.

The relative skill of those in the art is generally that of a Ph.D.

*Metal Finishing* represents a standard publication in the art and as such is directed to those having ordinary skill in the art.

2. **The breadth of the claims**

The claims are very broad and inclusive of any and all metals and metal ions.

3. **The amount of direction or guidance provided and the presence or absence of working examples**

The specification provides a limited number of metals and metal ions specified that demonstrate the prerequisite antimicrobial properties. However, if a metal, such as arsenic or lead were employed, (which is within the scope of the claims) the results would be potentially harmful.

4. **The quantity of experimentation necessary**

Applicant fails to provide guidance and information sufficient to allow the skilled artisan to ascertain which specific metals and metal ions, known or to be discovered,



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can be used to provide the antimicrobial effects without resorting to undue experimentation. The skilled artisan would expect the interactions of a particular metal and resin-based powder to be very specific and highly unpredictable absent a clear understanding of the structural and biochemical basis for each that would result in the "impact fusion" and the instant specification sets forth no such understanding nor any criteria for extrapolating beyond those actually demonstrated. Absent a reasonable *a priori* expectation of success for using the specific metals and metal ions to effect the impact fusion with a resin based powder, one skilled in the art would have to extensively test many various combinations of metal and metal ions with the resin-based powder to discover success in each case. Since each prospective embodiment, and indeed future embodiments as the art progresses, would have to be empirically tested, and those which initially failed tested further, an undue amount of experimentation would be required to practice the invention as it is claimed in its current scope, because the specification provides inadequate guidance to do otherwise.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 35-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While claims 23 and 31, recite antimicrobial agents selected from (i) metal; (ii) metal ion; (iii) silver; or (iv) solid antimicrobial agent, each having an different indicator (i), (ii), (iii) and (iv), giving them each separate status, claims 35 and 44 recite anti-

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**microbial metals or metal ions** (no silver) and claims 36-39, 43 and 45-52, are drawn to silver. Previously in claims 23 and 25-30, silver was separate from metal and metal ions, and now, confusingly, the metal and metal ions include silver. Clarification is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 23 and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sagawa et al.

Sagawa et al. teach a method of preparing powder coatings by employing resin powder such as epoxy, acrylic and polyester, metals and inorganic powders with low fusion points (column 6, lines 25-46 especially lines 39-41) that are impact fused by strong impact (see column 5, lines 51-52). Metals such as aluminum, copper, silver, tin, zinc and their alloys are employed (column 6 lines 59-61). The impact media is fused by vibration or stirring together (see column 3, line 57 to column 4, line 34).

It differs in that the reference does not teach that metals are antimicrobial agents, however, products of identical chemical composition (i.e. silver) can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims (i.e. antimicrobial properties) are necessarily present. In re Spada, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990) (Applicant argued that the claimed composition was a pressure sensitive adhesive containing a tacky polymer while the product of the reference was hard and abrasion resistant. "The Board correctly found that the virtual identity of monomers and procedures sufficed to support a prima facie case of unpatentability of Spada's polymer latexes for lack of novelty.").

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Regarding the "glass transition temperature" of claims 27 and 30, the samples were subjected to curing at 150° for 2 hours (column 15, line 18).

No claims are allowed.

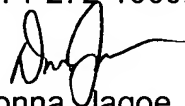
### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donna Jagoe whose telephone number is (571) 272-0576. The examiner can normally be reached on Monday through Thursday from 9:00 A.M. - 3:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ardin Marschel can be reached on (571) 272-0718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Donna Jagoe  
Patent Examiner  
Art Unit 1614

November 21, 2006



ARDIN H. MARSCHEL  
SUPERVISORY PATENT EXAMINER